EXPERIENCES OF NATIONWIDE IMPLEMENTATION OF INTEGRATED PRODUCTION IN HUNGARY

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Sustainable use of Pesticides & IPM in East-Central Europe and the Baltics
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Topics of the talk:

- From 1980's until EU accession: Short historical retrospect
- 2004-2009: National Rural Development Plan
  - 1st Agri-Environmental Special Programs
  - experiences
- 2009-2014: New Hungary Rural Development Program
  - 2nd Agri-Environmental Special Programs
- Learning from the lesson

Background for the development and implementation of integrated Production (incl. IPM) approach in Hungary

- 1976-1986: Agri-Ecosystem research (Jermy, 1975)
  - maize
    - continuous maize
    - rotated maize
  - apple orchards
    - intensive
    - conventional
    - abandoned
    - etc.
- 1994: Ministerial Decree on „Good Agricultural Practice”
- 1999: IOBC WPRS Guidelines (Integrated Production of Arable Crops in Europe (Boller, Malavolta and Jörg, 1997)
- 2002: FAO and OECD Documents on IPM

IPM: Integrated Pest Management

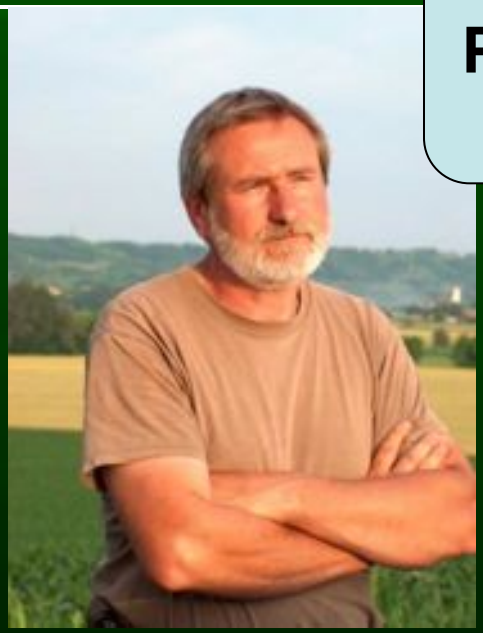
International Code of Conduct on the Distribution and Use of Pesticides, FAO of UN (2002):

"IPM means the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and environment. IPM emphasizes the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms."

2004-2009: National Rural Development Plan

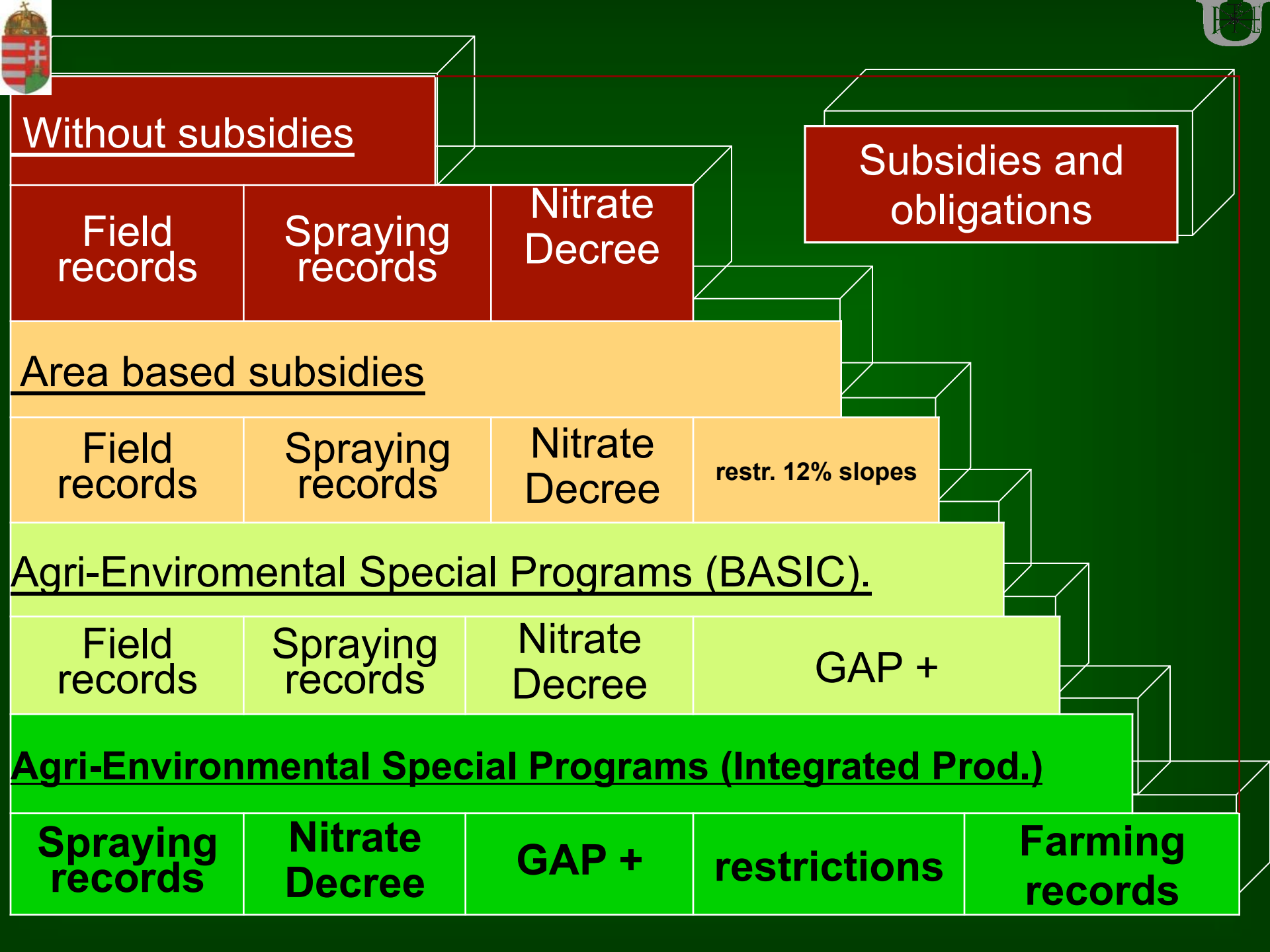
- 1st Agri-Environmental Special Programs
  - Integrated Production

- Experiences



Integrated Production???

Program Group	Special program: 2004-2009
Arable fields agri-environment programs	**Basic arable field program**
	Small family farm program
	Honeybee foraging plant production program
	Integrated Arable Production program
	Ecological field production program
	Long term set-aside program
	Rare plant varieties program
	Plant production in ESAs….
Grassland agri-environment programs	Basic pasture….
	Ecological pasture….
	Pasture in ESAs…….
Orchard agri-environment programs	Integrated Orchards…..
	Ecological orchards…..
	Rare fruit varieties…
Wetland agri-environment programs	Extensive fish ponds….
	Reed management….
	Establishment of wetlands….
	Moor and marshland areas….
Extensive animal husbandry programs	Gene reserve……
	Ecological animal husbandry


Without subsidies
Field records
Spraying records
Nitrate Decree
Subsidies and obligations
Area based subsidies
Field records
Spraying records
Nitrate Decree
restr. 12% slopes
Agri-Enviromental Special Programs (BASIC).
Field records
Spraying records
Nitrate Decree
GAP +
Agri-Environmental Special Programs (Integrated Prod.)
Spraying records
Nitrate Decree
GAP +
restrictions
Farming records

Subsidies (2005)
(payment for eco-services)

Type of subsidy	Euro/ha
Area based (EU SAPS)	86,21
Area based (Hungarian TopUp)	+ 80,92
Field crops (BASIC) program	+ 98,04
Integrated Field Production	+ 35,29
TOTAL	**300,46**

2004-2009: National Rural Development Plan
- 1st Agri-Environmental Special Programs

Integrated Arable Production focused on:

- value added agricultural production
- preserving valuable natural resources (land, water, biodiversity)
- cultural values, and
- special emphasis on the awareness of the use of plant protection products (PPPs),
- considered arable crops as system

Integrated Production (Field Crops), HUNGARY

1. **Application to be submitted by the REGISTERED FARMER;**
2. **Farmer to sign a 5 years contract;**
3. **5 years crop rotation plan had to be submitted;**
4. **Some rules, restrictions:**
   - max. 80% of cereals and maize,
   - sunflower once in 5 years period,
   - sugar- fodder beet, potato, soybean once in 4 years,
   - leguminous or green manure at least once in 5 years,
   - soybean, sunflower and oil seed rape can not follow each other,
   - soil nutrient analysis in 1st and last year (pH, KA, water soluble salts, humus, $CaCO_3$, P_2O_5, K_2O, NO_2+NO_3, Na, Mg, SO_4, Mn, Zn, Cu, toxic elements: Cd, Cu, Ni, Pb, Zn, Hg, Cr, As),

cont.

- nutrient supply must be planned accordingly,
- crop variety must be resistant to one signif. disease,
- crops involved: winter wheat, barley, maize, sunflower, sugar beet, potato, alfalfa, soybean, oil seed rape and field vegetables,
- forecast (pests, diseases, weeds) is obligatory,
- restricted or prohibited pesticides !!!!!
- continuous production of field crops IS PROHIBITED.

Integrated Crop Production (Field Crops), HUNGARY

Prohibited pesticides
an example for MAIZE:

Fungicides: benomil, carbendazim, TMTD
Herbicides: 2,4-D, imazamox, (in IMI-maize only)
Insecticides: chlorpyrifos, dimethoate;

Program Group	Special program (hectares), 2005
Arable agri-environment programs	**Basic arable field program** ← 763 000
	Small family farm program
	Honeybee foraging plant production program
	Integrated Arable Production ← 255 000
	Ecological field production program
	Long term set-aside program
	Rare plant varieties program
	Plant production in ESAs….
Pasture agri-environment programs	Basic pasture….
	Ecological pasture….
	Pasture in ESAs…….
Orchard agri-environment programs	Integrated Orchards…..
	Ecological orchards…..
	Rare fruit varieties…
Wetland agri-environment programs	Extensive fish ponds….
	Reed management….
	Establishment of wetlands….
	Moorland areas….
Extensive animal husbandry programs	Gene reserve……
	Ecological animal husbandry

Total: 1 500 000

Implementation experiences of Integrated Production (Field Crops), HUNGARY

Few crops in the cropping system, difficult to make a 5 years rotation plan (requirements, market and profitability).

Implementation experiences of Integrated Production (Field Crops), HUNGARY

DIFFICULTIES:

- Extra/additional expenses (soil analysis, admin. costs, regular field monitoring, pest and disease forecast, etc.),
- Soil samples for analysis, nutrient supply plan,
- Farm records,
- Fulfilling nutrient supply rules,
- Farming on fields with slopes,
- Restricted or prohibited pesticides
- Knowledge level and trust of farming communities.

IP requires increased capacity development of farmers, continuous training (complex approach, planning, data samplings and records, exchange of experiences and cooperation).

Conclusions….

1. Integrated Production is feasible.
2. Profitability of farm may not increase in the first year.
3. Extra inputs in Integrated Production decrease farm profitability in first year(s).
4. **Longer term benefits** are likely to increase the profit of farmers in Integrated Production in consecutive years:

- avoiding continuous field crop production (plant protection expenses);
- positive impact of green manure (soil structure, biology, nutrient balance);
- safe yearly extra income (subsidy) independent of markets;
- decrease of environmental load (fertilizers, pesticides);
- big step towards sustainable agriculture.

Conclusions… and implications




1. Along restrictions for pesticides in IP there is an increased need for biological and agrotechnical/cultural control options
2. Regional, national R&D should support IP development
3. More holistic approach is needed in R&D as well as in implementation of IP.
4. Farmers and the whole agricultural sector should be well prepared for these new challenges in order to decrease risk and increase benefits.
5. Improved communication with and services for farmers and rural communities is precondition for successful rural development (advisory services, private/state advisors, etc., knowledge transfer, capacity development).

2nd Agri-Environmental Special Programs 2009-2014

National Policy Frame for Integrated Production

Learning from the experiences of the 1st Program….

- EU accession (administrational burdens);
- The entire agri-environmental program was simplified;
- High priority was given for supporting integrated farming;

Objectives

Majority of the objectives of the 1st Agri Environmental Special Programs are also valid for the 2nd period (2009-2014)

Some new elements in general are as follows

- more complex integrated farming approach (consideration of animal husbandry, manure, local markets/products, etc.);

- IPM has been elaborated for several new arable crops to be involved in the rotation system;

- dissemination of the idea of environment-conscious farming;

Key elements of the 2nd Integrated Production Program

With special attention to arable field program

- The IP call is open for interested farmers to submit their applications;
- Duration of subsidy period (in the 5 year)
- exclusive use of PPPs belonging to category “safe for the environment” (national category)
- minimum supportable field size is 1ha

- A new element to comply with is “Cross compliance” – special farming requirements are specified in Council Regulation 73/2009/EC.
- Good Agricultural and Environmental Status sets out criteria and provisions on maintaining good agricultural and ecological status of agricultural areas. The strategy includes among others improvement of competitiveness, employment, the role of advisory services, food safety and information flow)

Experiences

The arable field special programs of the previous program were terminated with success. The integrated production had a significantly more important role in this new program. As a result, IP is being carried out on several hundred thousand hectares in Hungary. (around 500 tho ha)

IPM is a key element of the integrated production, therefore it is a basic criteria to have an appropriate choice and sufficient quantity of authorized PPP.
However, since the on-going EU review programs of the approved active substances,

- many PPP authorizations have been withdrawn and in several cases, there is no adequate and efficient PPPs to fit in the IPM (posing no risk to the environment)

Experiences (cont.)

- knowledge level and trust of farming communities is crucial

- lack of available active substances: withdrawal of active substances by the EU approval procedure

- no available PPPs for use in some crops, e.g. minor crops

- certification, temporary technical revision of plant protection machines (time consuming)

- Another disadvantage: the farmers are not in the position of selling their commodities as “high quality” integrated products produced in the special programs, but they have to place them on the market as conventional items. One of the possible reasons obviously is the lack of demand which can afford higher prices.

The objectives for the future

- to maintain the present spread and implementation of IP,

- to speed up the authorisation procedure of PPPs that can be used in both major and minor crops in the integrated programs;

- to work out an integrated production programs operated and controlled under state guarantee (with specific trade-mark);

- to classify PPPs into categories (under agri-environment programs and ecological production of the EU);

- update trainings

- information dissemination

Guarantee for implementation

(included in the National Action Plan)

- Increased responsibility of stakeholders/reinforcement of institutional organisations;

- Increased participation of all concerned/competent parties;

- Provision of high level services to the farming community;

- Harmonisation of integrated approach with sustainability;

Key stakeholders

- **Policy makers**

Ministry of Rural Development, Agricultural Office Directorate of Plant Protection, Soil Conservation and Agri-environment, 19 County Directorate of Plant Protection and Soil Conservation – legislation and international contacts

- **Universities, research institutes**

R&D support, training and education

- **Producers/Farmers Organisations, Production Councils**

dissemination of information, advises

Key stakeholders (2)

Hungarian Plant Protection Chamber (Experts with MSc in Plant Protection – Plant Doctors)
with 3000 members: partly responsible for providing advises in term of management programs, safe and reasonable application of PPPs

NGO's
Hungarian IPM Commission (operated by the Directorate of Plant Protection, Soil Conservation and Agri-environment): members are plant protection experts from universities, scientific bodies, authorities and the Plant Protection Chamber

Future tasks

- Farmers (key stakeholders) have to be involved already in the preparatory phase;
- Relevant institutional frame has to be developed;
- The existing organisations should be improved, opening their activities towards the rural communities;
- Capacity development of the farming communities;
- Specific labels (trade marks) for the IP products
- Information for the consumers;

Summary and some thoughts for the future

Comprehensive integrated programs are available in Hungary.

Establishment of nationwide IP is feasible but broad consultations and appropriate preparations are needed for the implementation.


Thank you for your attention